CDP-X303ES

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model

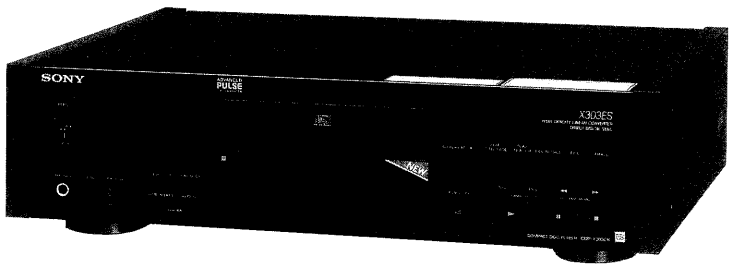


Photo: US, Canadian model

COMPACT disc DIGITAL AUDIO

Model Name Using Similar Mechanism	NEW
CD Transport Mechanism Type	CDM19E2-6H50
Optical Pick-up Block Type	BU-6H

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780-790 nm
Frequency response	2 Hz to 20 kHz ±0.3 dB
Signal-to-noise ratio	More than 117 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0018 %
Channel separation	More than 110 dB

Outputs

LINE OUT (FIXED)	Output level 2 V (at 50 kilo-ohms) Load impedance over 10 kilo-ohms
LINE OUT (VARIABLE)	Output level max. 2 V (at 50 kilo-ohms) Load impedance over 50 kilo-ohms
DIGITAL OUT (OPTICAL)	Wave length 660 nm Output level –18 dBm
PHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	US, Canadian model: 120V AC, 60Hz AEP, German model: 220—230V AC, 50/60Hz UK model: 240V AC, 50Hz
Power consumption	24 W
Dimensions (approx., including projections)	470 x125 x 375 mm (w/h/d) (18 5/8 x 5 x 14 7/8 inches)
Mass (approx.)	11.5 kg (25 lbs 6 oz): US, Canadian model 10.6 kg (23 lbs 6 oz): AEP, German, UK model

Remote commander (RM-D991)

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions (approx., including projections)	62 x 17 x 175 mm (w/h/d) (2 1/2 x 23/32 x 7 inches)
Mass (approx.)	135 g (5 oz)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

COMPACT DISC PLAYER

SONY®

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

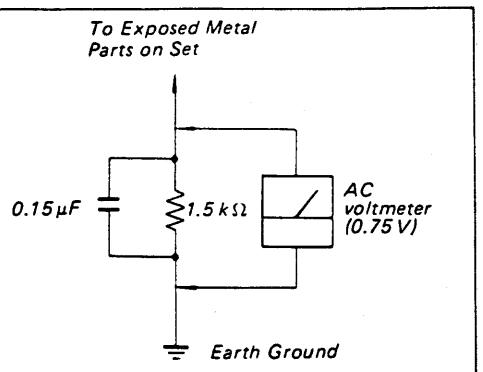
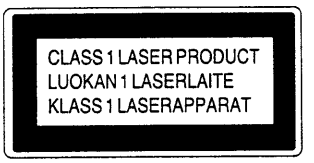


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

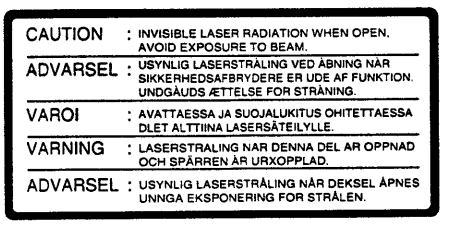
For the United kingdom and European countries



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

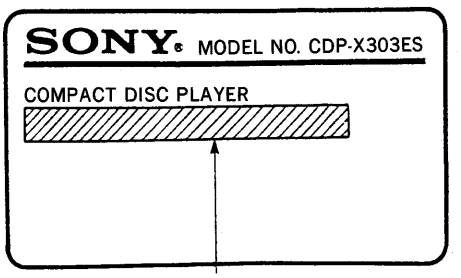
Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

The following caution label is located inside of the unit.


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅUDS ÆTTELSE FOR STRÅNING.
VAROI : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA DLET ALTTIINA LASERSÄTEILYLLE.
VARNING : LASERSTRALING NAR DENNA DEL AR OPPNAD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGA EKSPONERING FOR STRÅLEN.

MODEL IDENTIFICATION

—Model Number Label—



US, CND model: AC: 120V 60Hz 24W
AEP, G model : AC: 220—230V~50/60Hz
UK model : AC: 240V~50Hz

- Abbreviations:
  CND: Canadian model
  G : German model

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

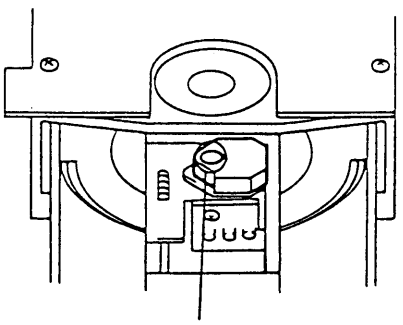
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential diference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



- Confirm that laser beam is spread.
- Up and down motion of the objective lens. (3 times)

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL
1-1. Identifying the Parts 4

2. ELECTRICAL BLOCK CHECKING 5

3. DIAGRAMS
3-1. Block Diagram 7
3-2. Circuit Boards Location 10
3-3. Printed Wiring Boards 11
3-4. Schematic Diagram 15
3-5. Semiconductor Lead Layouts 19

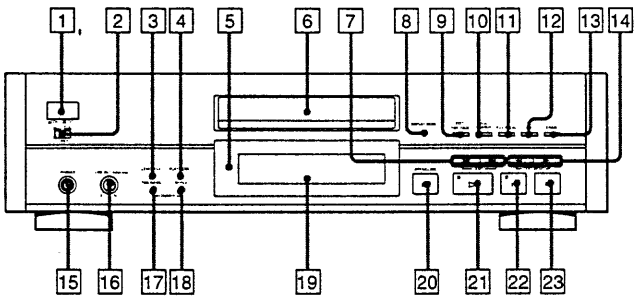
4. EXPLODED VIEWS
4-1. Cabinet 22
4-2. Front Panel 23
4-3. Chassis 24
4-4. CD Mechanism Block 25
4-5. Base Unit 26

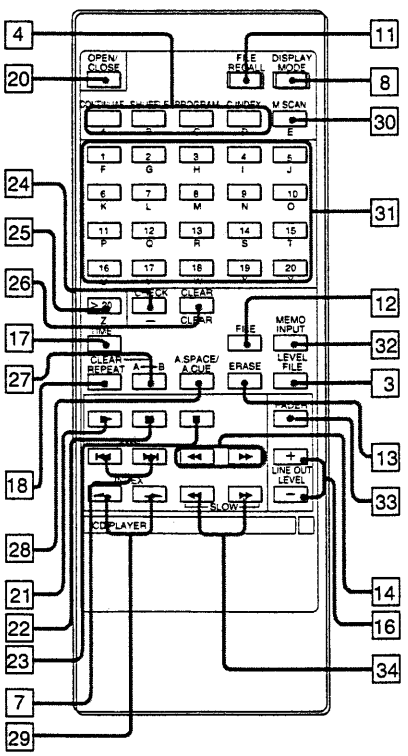
5. ELECTRICAL PARTS LIST 27

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS





Refer to the pages indicated in parentheses for details.

Front Panel/ Remote Commander

1 POWER switch (9)
2 TIMER switch (46)
3 LEVEL FILE button (45)
4 PLAY MODE button
On the remote commander:
CONTINUE button (9)
SHUFFLE button (14)
PROGRAM button (17, 24)
C.INDEX button (38)
5 Remote sensor
6 Disc tray
7 I◄◄/►►I (AMS*) buttons (11)
8 DISPLAY MODE button (10)
9 EDIT/TIME FADE button (29, 32)
10 PEAK SEARCH button (33)
11 FILE RECALL button (42, 44)
12 FILE (custom file) button (35, 37, 38, 41, 43)
13 ERASE button (40, 42, 44)
14 ◄◄/►► (manual search) buttons (12)
15 PHONES jack (9)
16 LINE OUT/PHONE LEVEL control (9, 45)
(LINE OUT LEVEL +/– buttons on the remote commander)
17 TIME/MEMO button (10)
18 REPEAT button (20)
19 Display
20 ≙ OPEN/CLOSE button (9)
21 ► (play) button and indicator (9)
22 II (pause) button and indicator (9)
23 ■ (stop) button (9)
24 CHECK (program check) button (18)
25 >20 button (11)
26 CLEAR button (15, 16, 17, 18)
27 A↔B button (21)
28 A.SPACE/A.CUE button (13)
29 —/— INDEX buttons (12, 39)
30 M.SCAN button (19)
31 Numeric buttons (11)
32 MEMO INPUT button (36)
33 FADER button (22)
34 ◄◄/►► SLOW buttons (12)

* AMS is the abbreviation of Automatic Music Sensor.

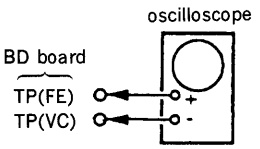
Note
Orange colored alphabets on the remote commander are for letter entry of disc memo function.

SECTION 2
ELECTRICAL BLOCK CHECKING

Note :

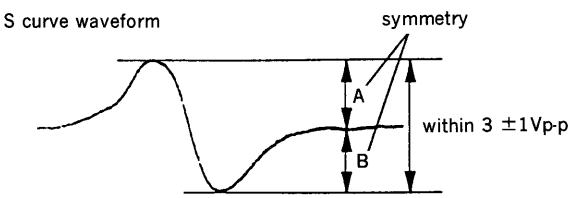
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) with lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

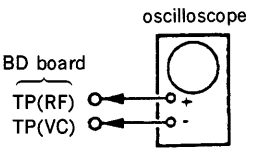


5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

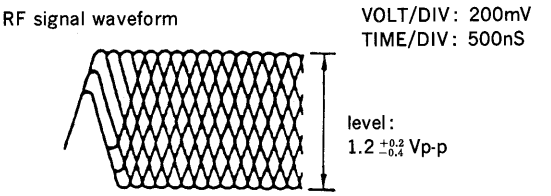


Procedure :

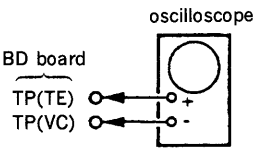
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

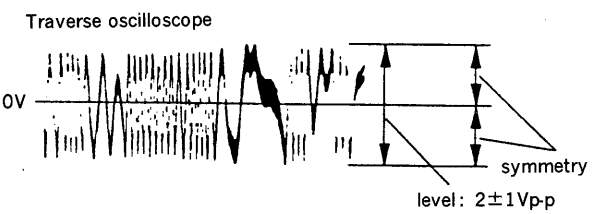


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wires.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

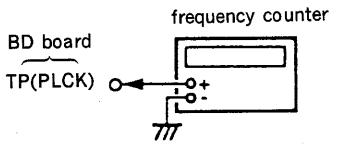


6. Remove the lead wires connected in step 1.

RF PLL Free-run Frequency Check

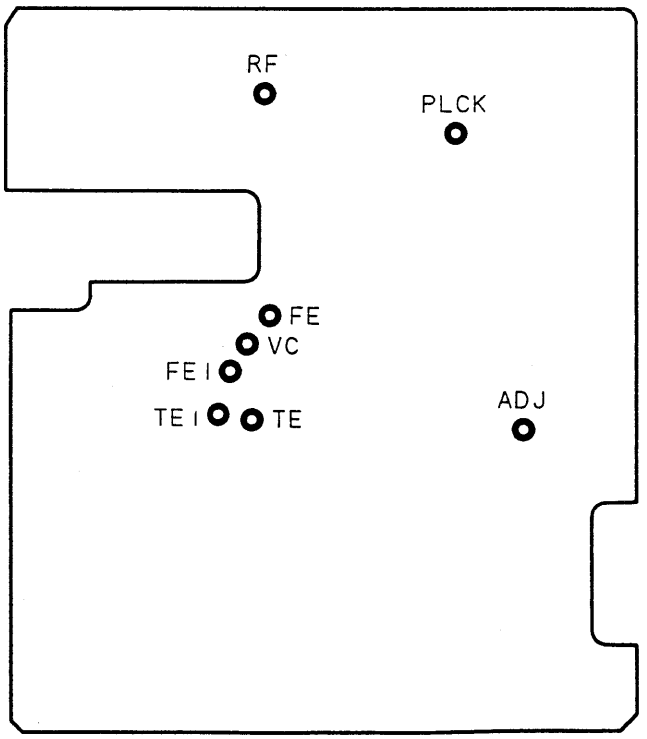
Procedure :

1. Connect frequency counter to test point TP (PLCK) with lead wire.



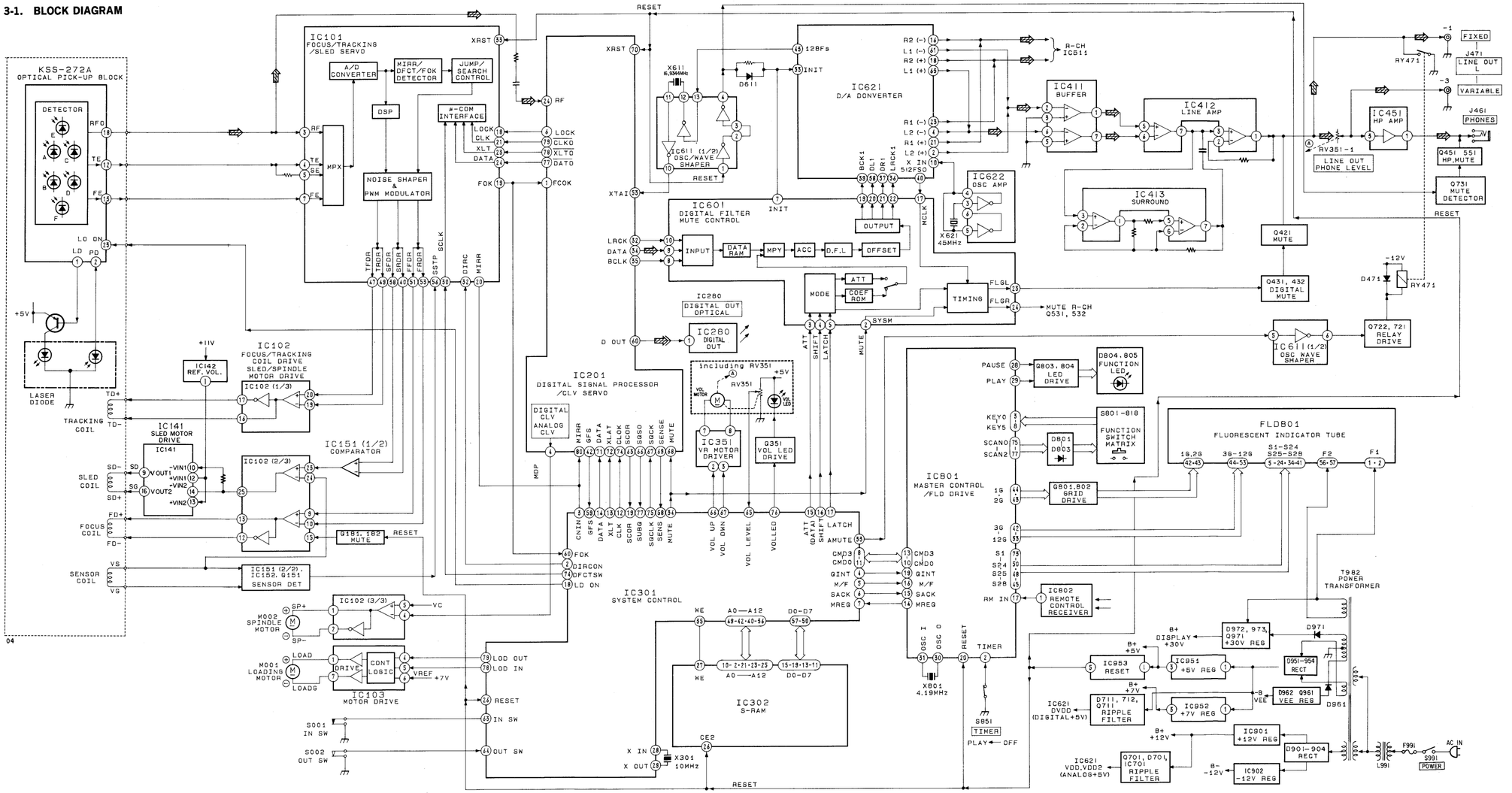
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Check Point Location : BD board—side A—

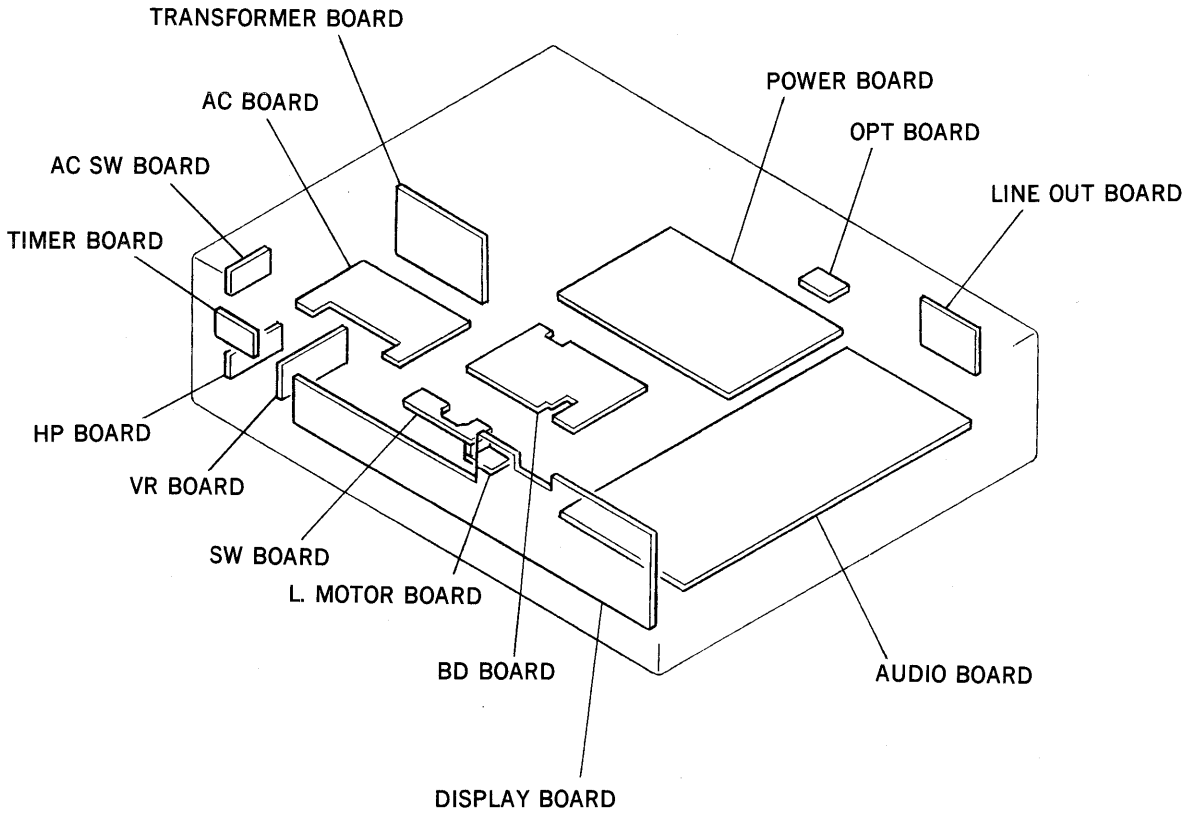


SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM



3-2. CIRCUIT BOARDS LOCATION



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	B-9	IC411	D-18
D431	B-17	IC412	D-18
D471	H-18	IC413	D-19
D531	B-16	IC451	B-12
D601	D-13	IC511	B-11
D611	D-13	IC512	B-18
D701	E-17	IC513	B-19
D711	E-15	IC601	C-13
D712	E-15	IC611	D-13
D731	B-13	IC621	C-14
D801	K-10	IC622	C-16
D802	K-10	IC701	D-16
D803	K-10	IC801	K-9
D804	K-4	IC802	K-11
D805	K-4	IC901	E-25
D901	C-25	IC902	E-24
D902	C-25	IC951	D-27
D903	C-24	IC952	E-27
D904	C-24	IC953	F-27
D905	F-25	Q151	B-3
D951	B-27	Q181	B-9
D952	B-27	Q182	B-9
D953	B-27	Q351	J-16
D954	B-26	Q421	D-20
D961	B-26	Q431	B-17
D962	D-26	Q432	B-11
D971	B-28	Q451	B-14
D972	C-28	Q521	C-20
D973	C-28	Q531	B-16
		Q532	B-15
IC101	B-8	Q551	B-14
IC102	B-3	Q701	D-11
IC103	A-2	Q711	E-15
IC141	C-4	Q721	E-17
IC142	B-4	Q722	E-16
IC151	A-7	Q731	C-13
IC152	A-8	Q801	K-8
IC201	D-9	Q802	K-8
IC280	H-15	Q803	K-3
IC301	C-2	Q804	K-3
IC302	C-9	Q961	D-26
IC351	J-15	Q971	B-28

3-3. PRINTED WIRING BOARDS ● Refer to page 19 for Semiconductor Lead Layouts.

【BD BOARD】 -SIDE A-

【BD BOARD】 -SIDE B-

【AUDIO BOARD】

【POWER BOARD】

US,CANADIAN,UK MODEL

【AC SW BOARD】

【AC BOARD】

AEP,GERMAN MODEL

【L.MOTOR BOARD】

【SW BOARD】

【DISPLAY BOARD】

【TIMER BOARD】

【OPT BOARD】

【LINE OUT BOARD】

【VR BOARD】

【HP BOARD】

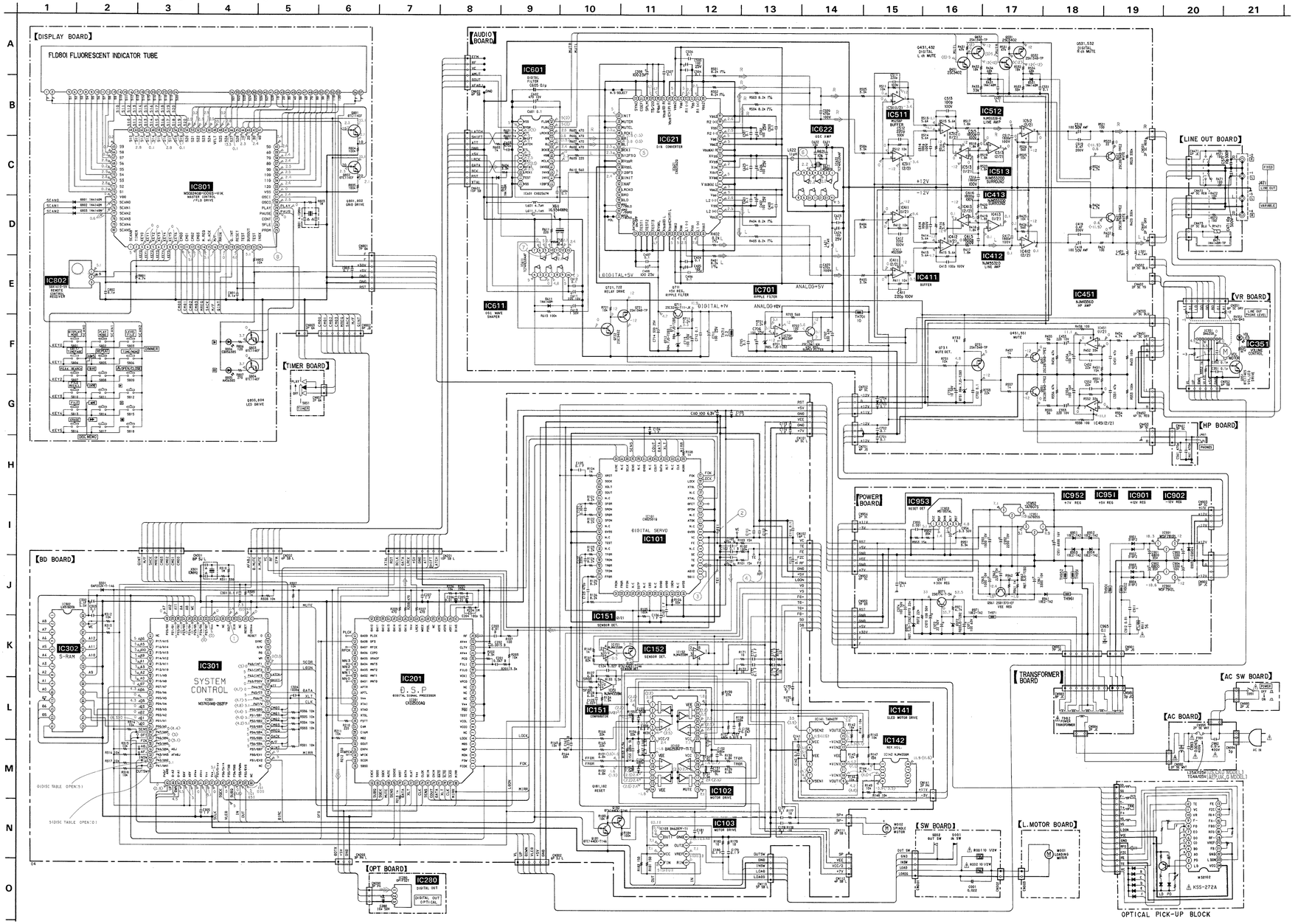
【TRANS FORMER BOARD】

Note:
- ○——: parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▨ : Pattern from the side whicc enable seeing.

(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

3-4. SCHEMATIC DIAGRAM • Refer to page 20 for IC Block Diagrams.



• Waveforms

1. 5Vp-p — 10MHz — IC301 ⑱
2. 2.5V / 0V — Approx. 0.5Vp-p — TP FEI PLAY
3. 2.5V / 0V — Approx. 0.5Vp-p — TP TEI PLAY
4. 3.2V / 2.2V / 0V — TP RF PLAY
5. 4.6Vp-p — 11.289MHz — IC621 ㉚
6. 6.2Vp-p — 45MHz — IC622 ④
7. 1.8Vp-p — 16.9MHz — IC611 ⑪
8. 4Vp-p — 4MHz — IC801 ⑪

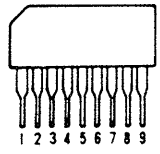
Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.

Note:	Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

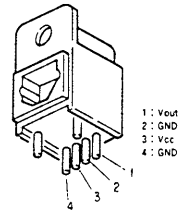
- : B+ Line
- : B− Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ): move on LOAD OUT
  (( )): move on LOAD IN
  < >: PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : CD
  : digital out
- Abbreviations:
  GND : Canadian model
  G : German model

3-5. SEMICONDUCTOR LEAD LAYOUTS

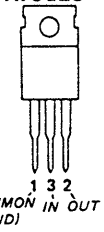
BA6208



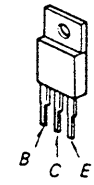
GP1F32T



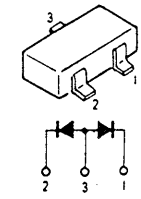
TA7912S



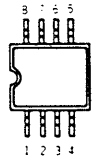
2SB1370-EF



1S2836

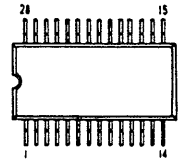


BA6287F
NJM4558M-T1



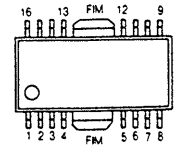
(TOP VIEW)

LH5160N-10L

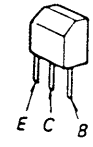


(TOP VIEW)

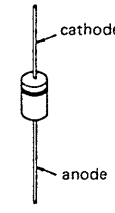
TA8407F (EL)



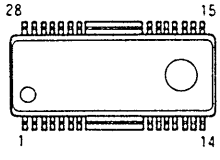
2SC1941-KA
2SD774-34



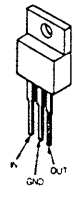
31DF2-FA



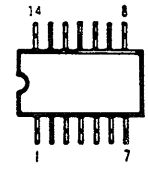
BA6297AFP



M5F78M07L
TA7805S
TA7812S

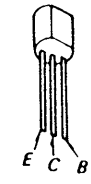


TC74HCU04AF

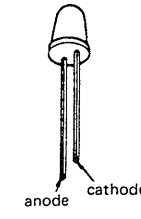


(TOP VIEW)

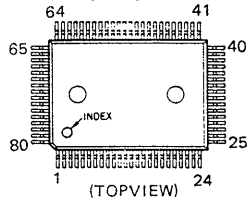
2SC2878-AB



EAA5638S
EBG5638S

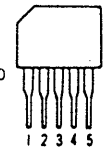


CXD2500AQ
MSC62408-
100GS-V1K
M37451M8-282FP

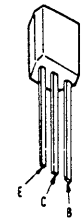


(TOPVIEW)

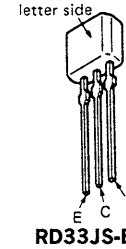
M51957AL



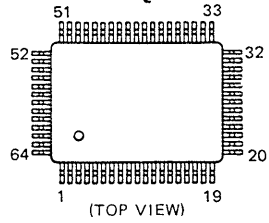
DTA114ES
DTC114ES



2SC3246-JK

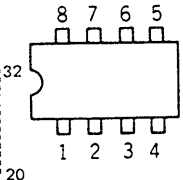


CXD2501Q
CXD2562Q



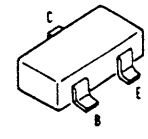
(TOP VIEW)

M5238P
RC4556D
RC5532DD

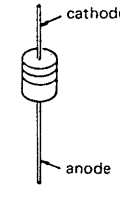


(Top view)

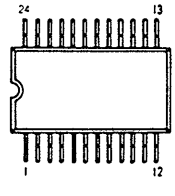
DTA144EK
DTC144EK



RD33JS-B2
RD4.7JS-B3
RD5.1JS-B2
RD7.5JS-B2
11EQS04

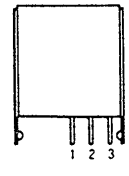


CXD2567M

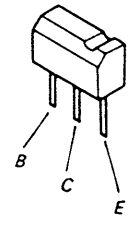


(TOP VIEW)

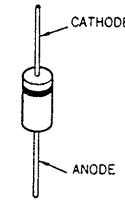
SBX1610-59



DTC114EF

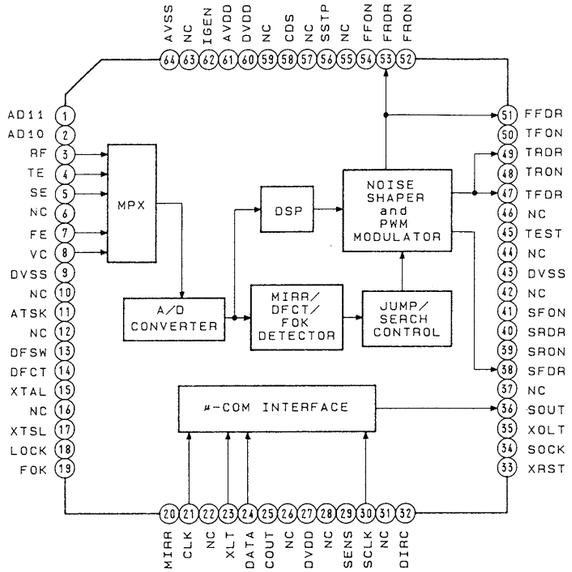


1N4148M
10E2

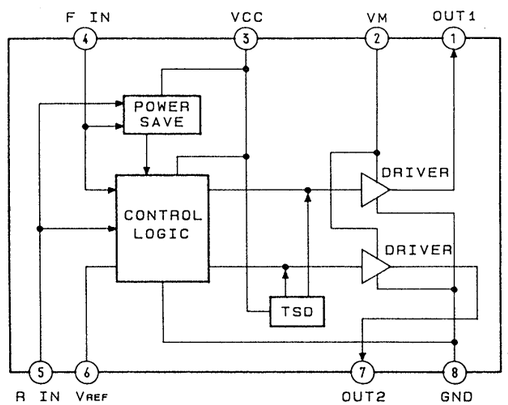


• **IC Block Diagrams**

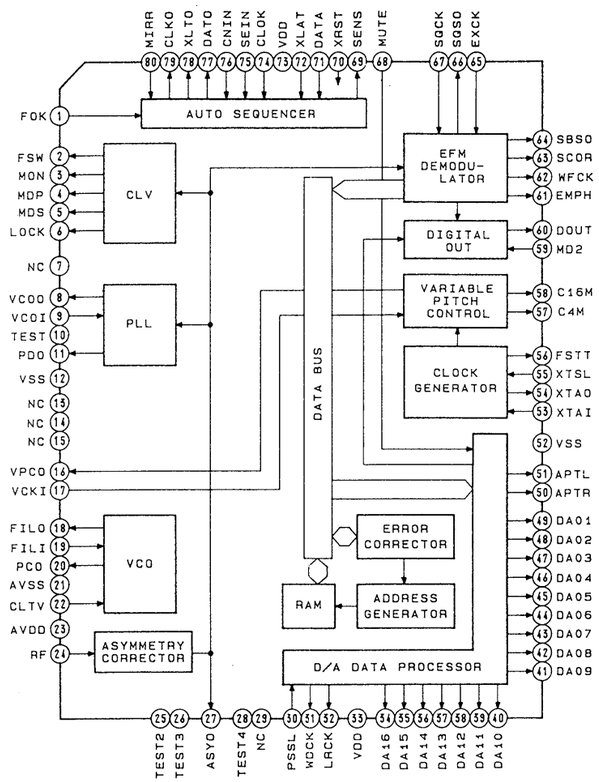
IC101 CXD2501Q


AVSS NC IGEN AVDD DVDD NC CDS NC SSTP NC FFON FRDR FRON
AD11 AD10 RF TE SE NC FE VC DVSS NC ATSK NC DFSW DFCT XTAL NC XTSL LOCK FOK
MPX
DSP
NOISE SHAPER and PWM MODULATOR
A/D CONVERTER
MIRR/ DFCT/ FOK DETECTOR
JUMP/ SEARCH CONTROL
μ-COM INTERFACE
FFDR TFON TRDR TRON TFDR NC TEST NC DVSS NC SFON SRDR SRON SFDR NC SQOUT XOLT SOCK XRST
MIRR CLK NC XLT DATA COUT NC DVDD NC SENS SCLK NC DIRC

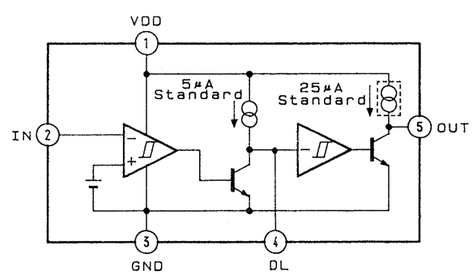
IC102 BA6297AFP



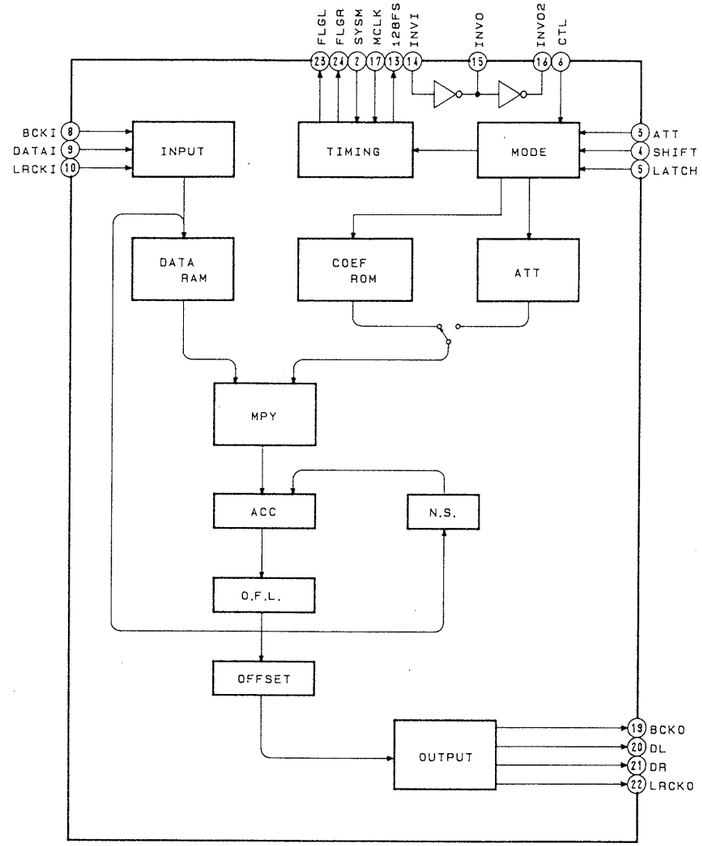
IC201 CXD2500AQ


MIRR CLKO XLTO DATO CNIN SEIN CLOK VDD XLAT DATA XRST SENS MUTE SQCK SQSO EXCK
FOK FSW MON MDP MDS LOCK NC VCOO VCOI TEST PDO VSS NC NC NC VPCO VCKI FILO FILI PCO AVSS CLTV AVDD RF
AUTO SEQUENCER
CLV
PLL
VCO
ASYMMETRY CORRECTOR
EFM DEMODU-LATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERATOR
DATA BUS
ERROR CORRECTOR
RAM
ADDRESS GENERATOR
D/A DATA PROCESSOR
SBSO SCOR WFCK EMPH DOUT MD2 C16M C4M FSTT XTSL XTAO XTAI VSS APTL APTR DA01 DA02 DA03 DA04 DA05 DA06 DA07 DA08 DA09
TEST2 TEST3 ASYO TEST4 NC PSSL WDCK LRCK VDD DA16 DA15 DA14 DA13 DA12 DA11 DA10

IC953 M51957AL



IC601 CXD2567M



SECTION 4
EXPLODED VIEWS

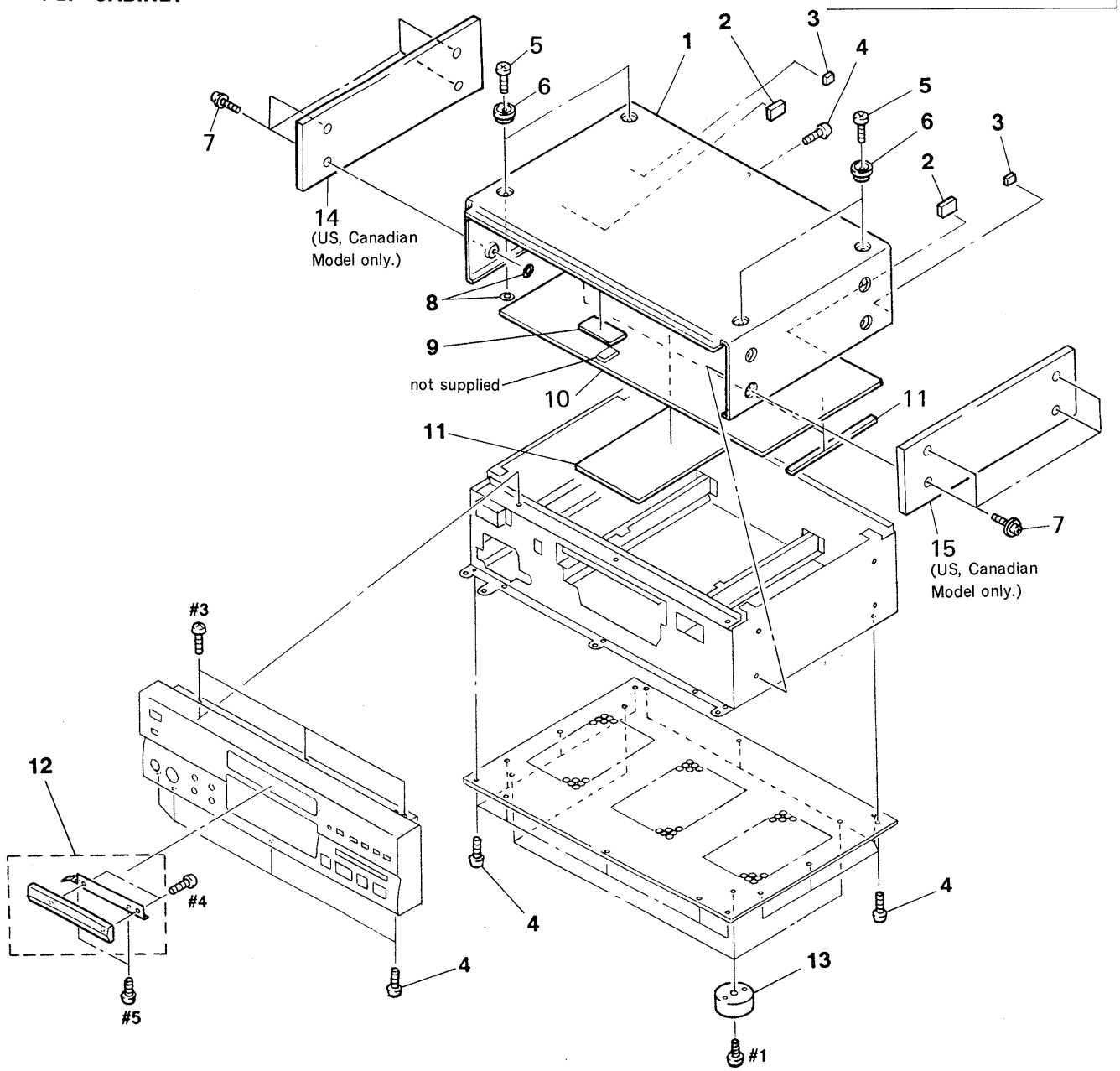
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

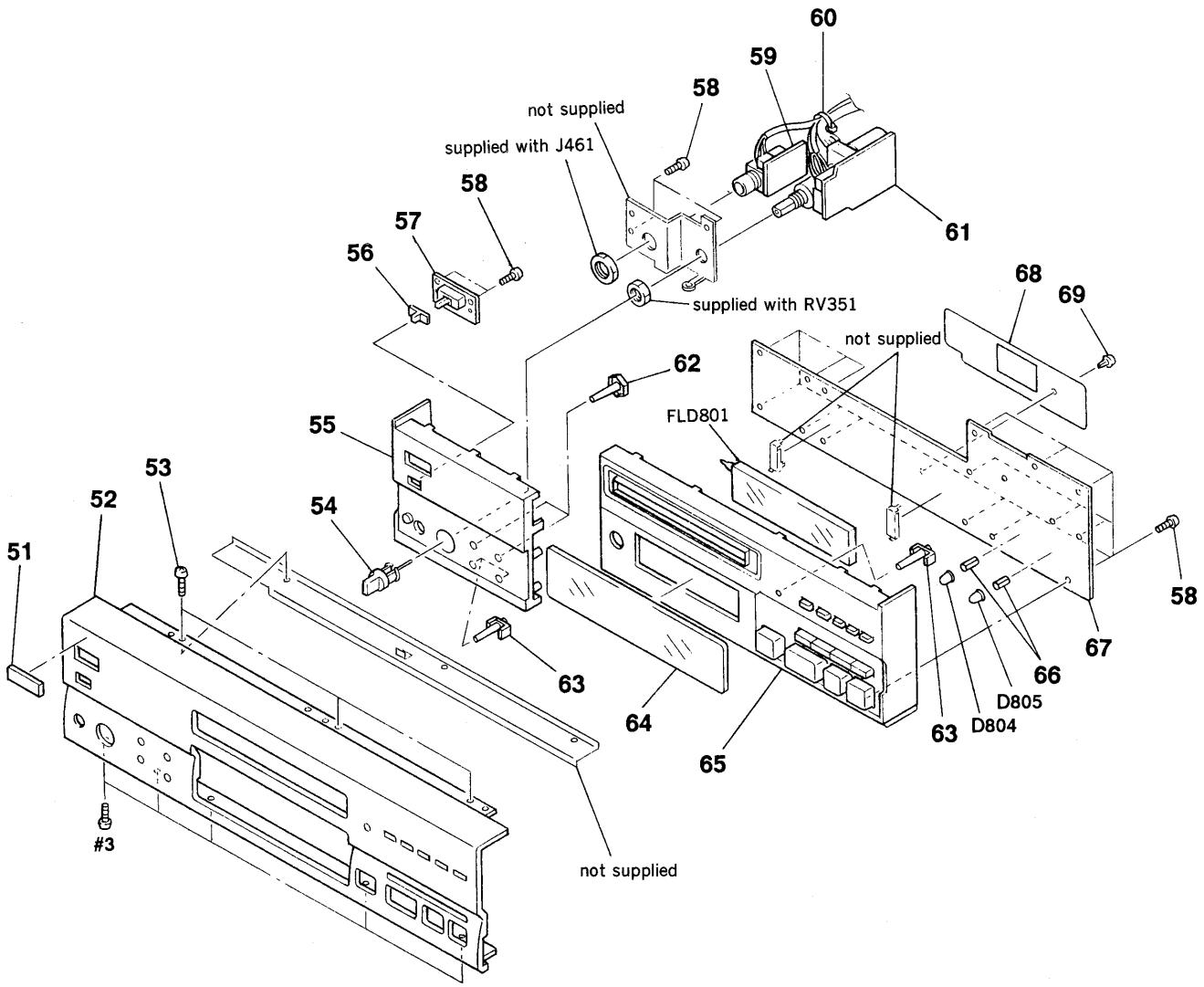
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

4-1. CABINET



Ref. No.	Part No.	Description	Remark
1	4-934-043-01	CASE (UK)	
* 1	4-934-043-41	CASE (US, Canadian, AEP, German)	
2	9-911-845-XX	CUSHION (TOP CASE)	
* 3	4-929-007-01	CUSHION (CASE)	
4	4-929-074-01	SCREW (3X8)	
5	4-924-242-11	SCREW (M3X6), FLAT HEAD	
6	4-928-025-11	ESCUTCHEON (TOP PLATE)	
7	4-847-802-00	SCREW (AEP, UK, German)	
7	4-885-979-11	SCREW (4X25) (US, Canadian)	
8	4-935-917-01	WASHER (CASE)	
* 9	4-923-563-11	CUSHION	
10	A-4675-309-A	REINFORCEMENT (TOP PLATE) ASSY	
11	3-831-441-11	SPACER	
12	X-4943-009-1	PANEL ASSY, LOADING	
13	X-4941-014-1	FOOT ASSY	
14	X-4928-001-1	PLATE (LEFT) ASSY, SIDE (US, Canadian)	
15	X-4928-002-1	PLATE (RIGHT) ASSY, SIDE (US, Canadian)	

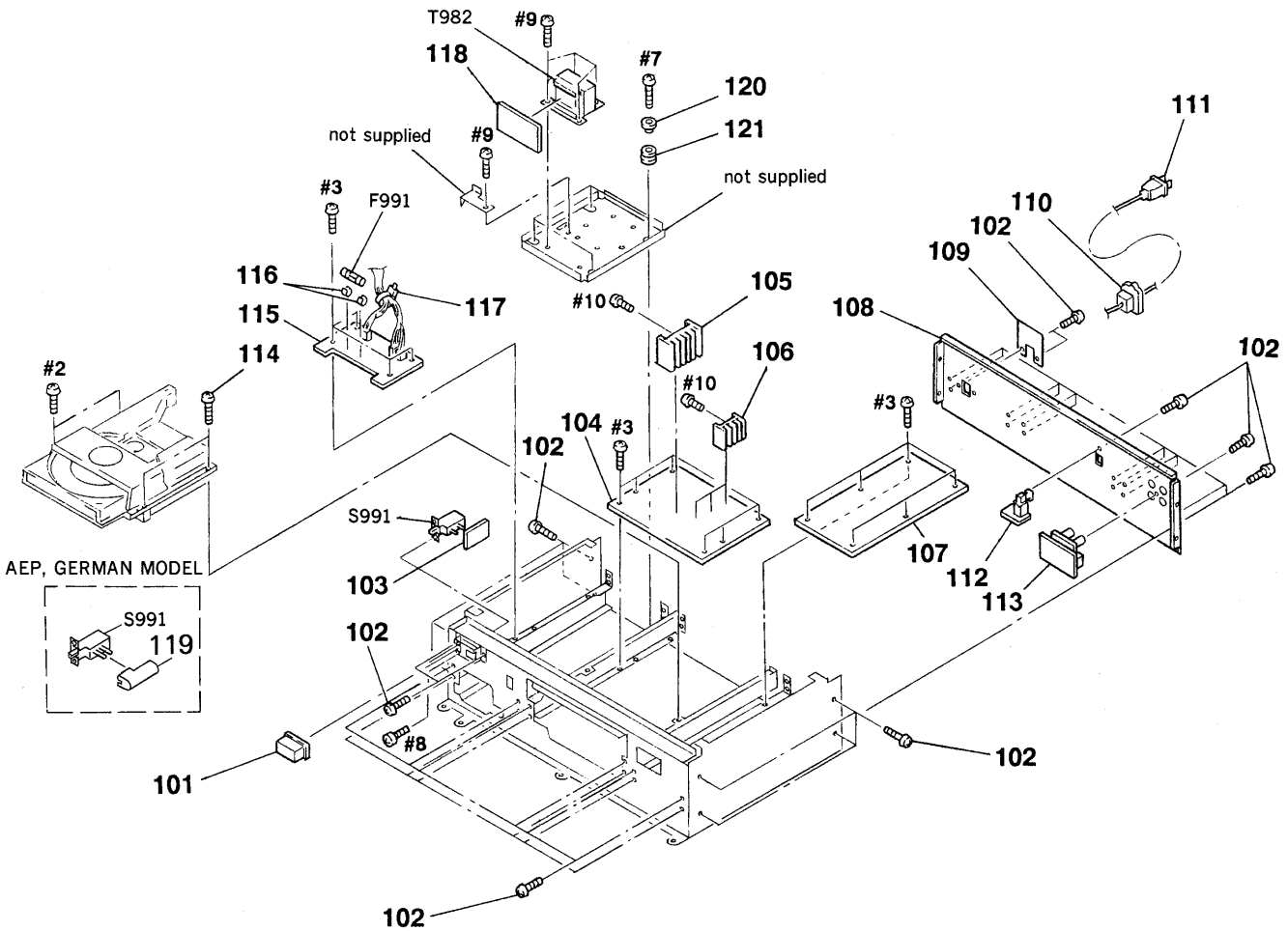
4-2. FRONT PANEL



Ref. No.	Part No.	Description	Remark
51	4-942-568-01	EMBLEM (NO. 5), SONY	
52	4-955-070-11	PANEL, FRONT (US, Canadian, UK)	
52	4-955-070-21	PANEL, FRONT (AEP, German)	
53	3-703-685-21	SCREW (+BV 3X8)	
54	A-4604-901-A	KNOB (LINE OUT) ASSY	
55	4-955-058-01	PANEL (BASE L)	
56	4-922-518-11	KNOB (TIMER)	
* 57	1-646-356-11	TIMER BOARD	
58	4-951-620-01	SCREW (2.6X8), +BVTP	
* 59	1-646-355-11	HP BOARD	
60	3-655-653-21	BAND (TAITON), BINDING	
* 61	1-646-354-11	VR BOARD	

Ref. No.	Part No.	Description	Remark
62	4-955-078-01	BUTTON (LEVEL FILE, PLAY MODE)	
63	4-941-085-01	BUTTON (TIME/MEMO, REPEAT, DISPLAY MODE)	
64	4-955-059-01	PLATE, INDICATION	
65	X-4943-006-1	BASE (R) ASSY, PANEL	
* 66	4-923-532-01	SPACER, LED	
* 67	A-4649-423-A	DISPLAY BOARD, COMPLETE	
* 68	4-955-888-01	COVER (CABLE)	
69	3-531-576-11	RIVET	
D804	8-719-913-49	LED EBG5638S (▶)	
D805	8-719-913-47	LED EAA5638S (II)	
FLD801	1-517-128-11	INDICATOR TUBE, FLUORESCENT	

4-3. CHASSIS

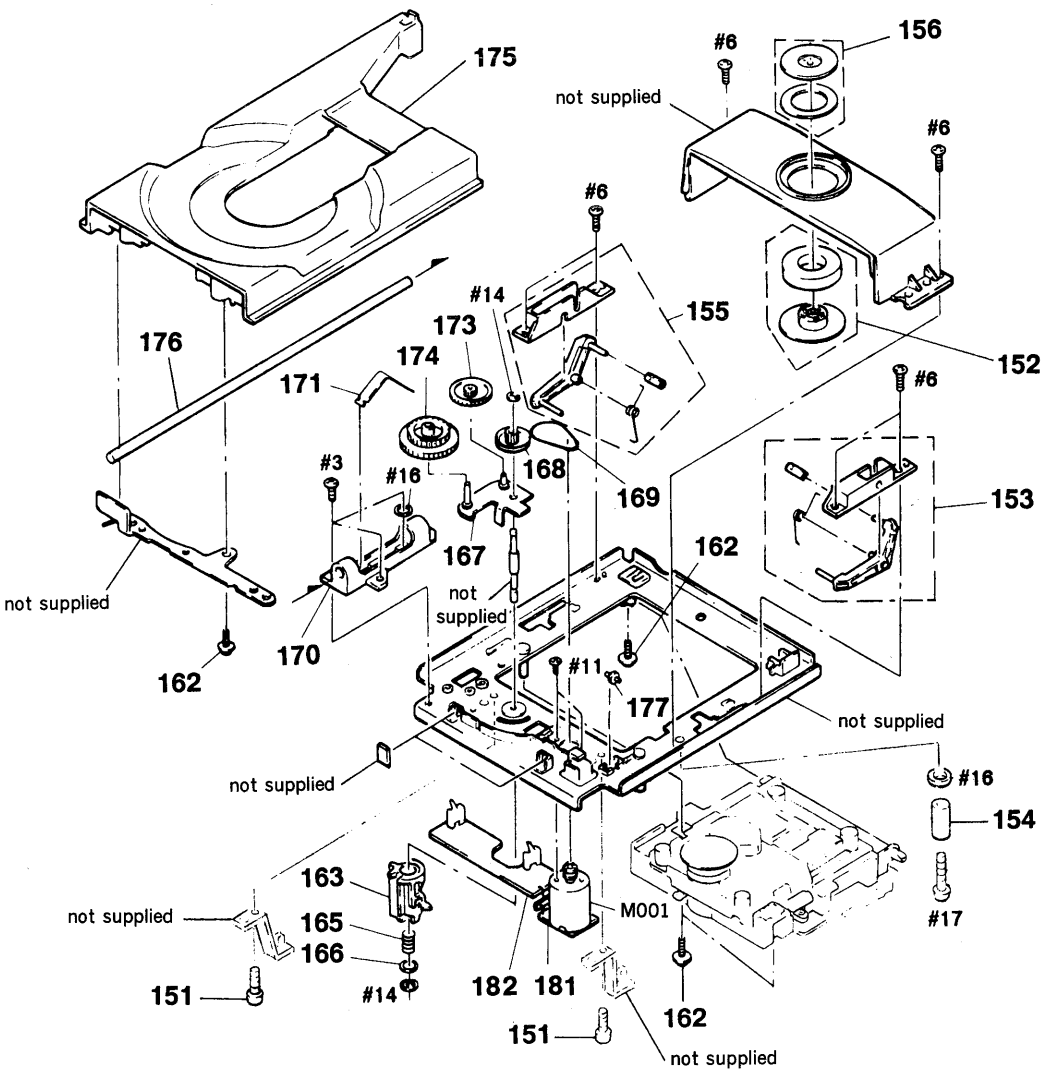


The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	4-923-520-51	KNOB, POWER	
102	4-929-074-01	SCREW (3X8)	
* 103	1-646-359-11	AC SW BOARD (US, Canadian, UK)	
* 104	A-4649-680-A	POWER BOARD, COMPLETE	
* 105	4-921-402-01	HEAT SINK	
* 106	4-363-146-00	HEAT SINK, V. OUT	
* 107	A-4649-547-A	AUDIO BOARD, COMPLETE	
* 108	4-955-063-12	PANEL, BACK (AEP, German)	
* 108	4-955-063-23	PANEL, BACK (UK)	
* 108	4-955-063-31	PANEL, BACK (Canadian)	
* 108	4-955-063-41	PANEL, BACK (US)	
* 109	4-923-873-01	BRACKET, CORD STOPPER	
* 110	3-703-244-00	BUSHING (2104), CORD	
⚠111	1-558-568-21	CORD, POWER (AEP, German)	
⚠111	1-559-583-21	CORD, POWER (US, Canadian)	
⚠111	1-696-934-11	CORD, POWER (UK)	

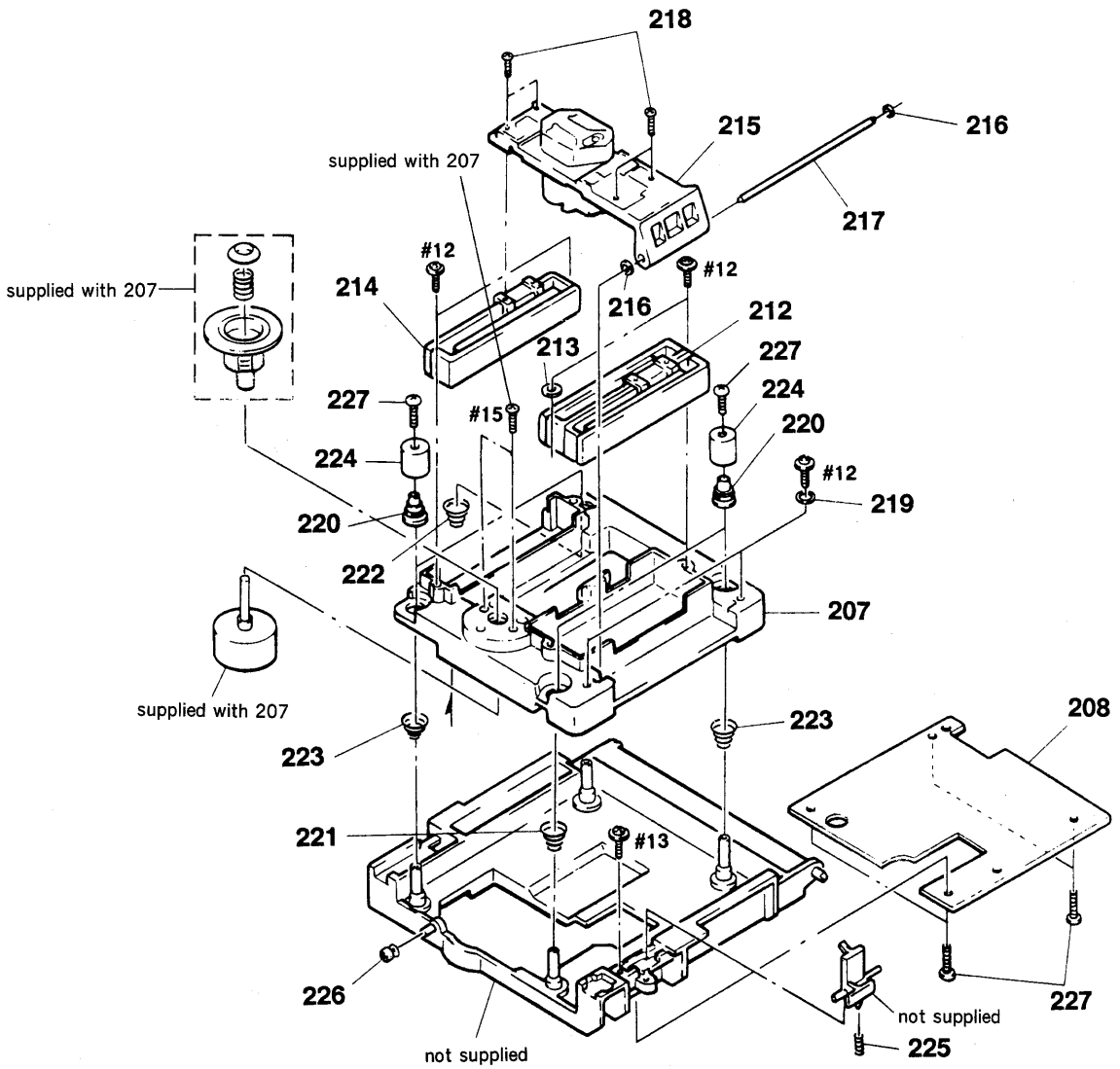
Ref. No.	Part No.	Description	Remark
* 112	1-646-361-11	OPT BOARD	
* 113	1-646-362-11	LINE OUT BOARD	
114	3-703-685-21	SCREW (+BV 3X8)	
* 115	1-646-363-11	AC BOARD	
116	1-533-183-11	HOLDER, FUSE	
117	3-655-653-21	BAND (TAITON), BINDING	
* 118	1-646-358-11	TRANSFORMER BOARD	
119	3-575-524-00	COVER, POWER SWITCH (AEP, German)	
120	4-928-032-01	COLLAR (A)	
* 121	4-888-798-00	BUSHING, RUBBER	
⚠F991	1-532-066-00	FUSE, TIME-LAG (T0.4A) (AEP, UK, German)	
⚠F991	1-532-741-11	FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)	
⚠S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
⚠T982	1-423-453-11	TRANSFORMER, POWER (US, Canadian)	
⚠T982	1-423-454-11	TRANSFORMER, POWER (AEP, UK, German)	

4-4. CD MECHANISM BLOCK (CDM19E2-6H50)



Ref. No.	Part No.	Description	Remark
151	3-703-685-21	SCREW (+BV 3X8)	
* 152	4-918-679-04	PULLEY, PRESS	
153	A-4604-914-A	LOCK (R) ASSY, STABLE	
154	3-654-603-00	SPACER	
155	A-4604-913-A	LOCK (L) ASSY, STABLE	
156	A-4665-024-A	MAGNET ASSY	
* 162	4-917-583-21	BRACKET, YOKE	
* 163	4-948-371-01	CAM (BU)	
165	3-659-338-00	SPRING, COMPRESSION	
166	4-927-654-01	WASHER (LIMITER)	
167	X-4927-608-1	ARM ASSY, SWING	
168	4-929-724-01	PULLEY (B)	
169	4-927-649-01	BELT	
* 170	4-948-360-01	BEARING, LOADING	
* 171	4-927-648-01	SLIDER (GROUND)	
173	4-927-628-01	GEAR (C)	
174	4-927-620-01	GEAR (P)	
175	4-948-353-01	TABLE, DISC	
* 176	4-948-368-01	BAR (MAIN), GUIDE	
177	4-927-627-01	ROLLER (S, G)	
* 181	1-641-765-11	L. MOTOR BOARD	
* 182	1-641-764-11	SW BOARD	
M001	A-4604-347-A	MOTOR (LOADING) ASSY	

4-5. BASE UNIT (BU-6H)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
207	X-4942-963-1	BASE ASSY, MECHANICAL	
* 208	A-4649-489-A	BD BOARD, COMPLETE	
212	A-4608-335-A	MOTOR ASSY, LINEAR	
213	4-927-669-01	WASHER (BU)	
214	A-4638-084-A	SENSOR ASSY, SPEED	
⚠215	8-848-244-11	DEVICE, OPTICAL KSS-272A	
* 216	4-917-582-01	CUSHION, SLIDE	
* 217	4-910-431-01	SHAFT, SLIDE	
218	3-318-203-61	SCREW (B1.7X4), TAPPING	

Ref. No.	Part No.	Description	Remark
219	4-927-318-01	WASHER	
* 220	4-917-584-11	INSULATOR	
221	4-917-573-01	SPRING (E)	
222	4-917-571-01	SPRING (A)	
223	4-917-572-01	SPRING (B)	
224	4-927-634-01	HOLDER (SP)	
225	3-305-423-00	SPRING, COMPRESSION	
226	4-927-631-01	ROLLER (L)	
227	4-951-620-01	SCREW (2.6X8), +BVTP	

SECTION 5
ELECTRICAL PARTS LIST

AC | AC SW | AUDIO

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remark
*	1-646-363-11	AC BOARD			
		********			
	1-533-183-11	HOLDER, FUSE			
		< CAPACITOR >			
⚠C992	1-161-744-00	CERAMIC	0.01uF		400V
⚠C993	1-162-599-12	CERAMIC	0.0047uF	20%	400V
		< CONNECTOR >			
CN992	1-564-321-00	PIN, CONNECTOR 2P			
CN993	1-564-321-00	PIN, CONNECTOR 2P			
* CN994	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P			
		< COIL >			
⚠L991	1-421-915-11	COIL, LINE FILTER			
**********					
*	1-646-359-11	AC SW BOARD (US, Canadian, UK)			
		**********			
		< SWITCH >			
⚠S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (US, Canadian, UK)			
**********					
*	A-4649-547-A	AUDIO BOARD, COMPLETE			
		**********			
		< BUS BAR >			
BUS701	1-569-136-11	BAR, BUS 5P			
		< CAPACITOR >			
C401	1-130-495-00	MYLAR	0.1uF	5%	50V
C402	1-124-122-11	ELECT	100uF	20%	50V
C403	1-130-495-00	MYLAR	0.1uF	5%	50V
C404	1-130-495-00	MYLAR	0.1uF	5%	50V
C405	1-124-122-11	ELECT	100uF	20%	50V
C406	1-130-495-00	MYLAR	0.1uF	5%	50V
C407	1-136-165-00	FILM	0.1uF	5%	50V
C408	1-124-122-11	ELECT	100uF	20%	50V
C409	1-136-812-11	FILM	470PF	5%	100V
C411	1-136-810-11	FILM	220PF	5%	100V
C412	1-136-810-11	FILM	220PF	5%	100V
C413	1-136-808-11	FILM	100PF	5%	100V
C414	1-136-808-11	FILM	100PF	5%	100V
C415-417					
	1-136-192-11	FILM	0.0018uF	2%	100V
C418	1-124-572-11	ELECT	100uF	20%	63V
C419	1-136-580-11	FILM	0.47uF	10%	200V
C431	1-130-495-00	MYLAR	0.1uF	5%	50V
C451	1-162-215-31	CERAMIC	47PF	5%	50V
C452	1-162-207-31	CERAMIC	22PF	5%	50V
C453	1-124-995-11	ELECT	220uF	20%	10V
C454	1-126-023-11	ELECT	100uF	20%	16V
C501	1-130-495-00	MYLAR	0.1uF	5%	50V
C502	1-124-122-11	ELECT	100uF	20%	50V
C503	1-130-495-00	MYLAR	0.1uF	5%	50V
C504	1-130-495-00	MYLAR	0.1uF	5%	50V
C505	1-124-122-11	ELECT	100uF	20%	50V
C506	1-130-495-00	MYLAR	0.1uF	5%	50V
C507	1-136-165-00	FILM	0.1uF	5%	50V
C508	1-124-122-11	ELECT	100uF	20%	50V
C509	1-136-812-11	FILM	470PF	5%	100V
C511	1-136-810-11	FILM	220PF	5%	100V
C512	1-136-810-11	FILM	220PF	5%	100V
C513	1-136-808-11	FILM	100PF	5%	100V
C514	1-136-808-11	FILM	100PF	5%	100V
C515-517					
	1-136-192-11	FILM	0.0018uF	2%	100V
C518	1-124-572-11	ELECT	100uF	20%	63V
C519	1-136-580-11	FILM	0.47uF	10%	200V
C531	1-130-495-00	MYLAR	0.1uF	5%	50V
C551	1-162-215-31	CERAMIC	47PF	5%	50V
C552	1-162-207-31	CERAMIC	22PF	5%	50V
C553	1-124-995-11	ELECT	220uF	20%	10V
C554	1-126-023-11	ELECT	100uF	20%	16V
C601	1-136-165-00	FILM	0.1uF	5%	50V
C602	1-124-997-11	ELECT	470uF	20%	10V
C603	1-162-290-31	CERAMIC	470PF	10%	50V

AUDIO

Ref. No.	Part No.	Description			Remark
C604	1-164-159-11	CERAMIC	0.1uF		50V
C605	1-164-159-11	CERAMIC	0.1uF		50V
C611	1-124-995-11	ELECT	220uF	20%	10V
C612	1-136-165-00	FILM	0.1uF	5%	50V
C613	1-126-301-11	ELECT	1uF	20%	50V
C621	1-162-199-31	CERAMIC	10PF	5%	50V
C622	1-162-199-31	CERAMIC	10PF	5%	50V
C623	1-130-495-00	MYLAR	0.1uF	5%	50V
C624	1-124-122-11	ELECT	100uF	20%	50V
C625	1-162-806-11	CERAMIC	0.1uF	10%	50V
C626	1-124-122-11	ELECT	100uF	20%	50V
C701	1-162-806-11	CERAMIC	0.1uF	10%	50V
C702	1-162-806-11	CERAMIC	0.1uF	10%	50V
C703	1-130-495-00	MYLAR	0.1uF	5%	50V
C704	1-130-495-00	MYLAR	0.1uF	5%	50V
C705	1-162-806-11	CERAMIC	0.1uF	10%	50V
C706	1-124-122-11	ELECT	100uF	20%	50V
C707	1-124-920-11	ELECT	330uF	20%	63V
C711	1-124-122-11	ELECT	100uF	20%	50V
C712	1-130-495-00	MYLAR	0.1uF	5%	50V
C713	1-126-101-11	ELECT	100uF	20%	16V
C714	1-126-025-11	ELECT	330uF	20%	25V
C731	1-126-059-11	ELECT	10uF	20%	50V
C732	1-136-165-00	FILM	0.1uF	5%	50V

< CONNECTOR >

* CN401	1-573-261-11	PIN, CONNECTOR 2P	
* CN402	1-573-261-41	PIN, CONNECTOR 2P	
* CN451	1-573-263-11	PIN, CONNECTOR 4P	
* CN452	1-573-263-21	PIN, CONNECTOR 4P	
* CN453	1-573-262-11	PIN, CONNECTOR 3P	
* CN501	1-573-261-21	PIN, CONNECTOR 2P	
* CN502	1-573-261-31	PIN, CONNECTOR 2P	
* CN601	1-569-997-11	PIN, CONNECTOR (PC BOARD)	10P
* CN602	1-569-993-11	PIN, CONNECTOR (PC BOARD)	6P
* CN701	1-573-863-21	PIN, CONNECTOR (PC BOARD)	4P
* CN702	1-573-263-11	PIN, CONNECTOR 4P	
* CN703	1-573-261-31	PIN, CONNECTOR 2P	

< DIODE >

D431	8-719-987-63	DIODE	1N4148M
D531	8-719-987-63	DIODE	1N4148M
D601	8-719-987-63	DIODE	1N4148M
D611	8-719-987-63	DIODE	1N4148M
D701	8-719-114-30	DIODE	RD5.1JS-B2
D711	8-719-114-27	DIODE	RD4.7JS-B3
D712	8-719-114-27	DIODE	RD4.7JS-B3
D731	8-719-114-27	DIODE	RD4.7JS-B3

Ref. No.	Part No.	Description	Remark

< IC >

IC411	8-759-602-83	IC	M5238P
IC412	8-759-982-03	IC	RC5532DD
IC413	8-759-982-03	IC	RC5532DD
IC451	8-759-981-85	IC	RC4556D
IC511	8-759-602-83	IC	M5238P
IC512	8-759-982-03	IC	RC5532DD
IC513	8-759-982-03	IC	RC5532DD
IC601	8-752-356-03	IC	CXD2567M
IC611	8-759-233-64	IC	TC74HCU04AF
IC621	8-759-044-10	IC	CXD2562Q
IC622	8-759-233-64	IC	TC74HCU04AF
IC701	8-759-602-83	IC	M5238P

< INDUCTOR >

L401	1-410-969-11	INDUCTOR	4.7uH
L501	1-410-969-11	INDUCTOR	4.7uH
L601	1-410-969-11	INDUCTOR	4.7uH
L611	1-410-397-21	FERRITE BEAD INDUCTOR	1.1uH
L621	1-410-969-11	INDUCTOR	4.7uH
L622	1-410-397-21	FERRITE BEAD INDUCTOR	1.1uH

< TRANSISTOR >

Q421	8-729-231-55	TRANSISTOR	2SC2878-AB
Q431	8-729-900-80	TRANSISTOR	DTC114ES
Q432	8-729-900-61	TRANSISTOR	DTA114ES
Q451	8-729-231-55	TRANSISTOR	2SC2878-AB
Q521	8-729-231-55	TRANSISTOR	2SC2878-AB
Q531	8-729-900-80	TRANSISTOR	DTC114ES
Q532	8-729-900-61	TRANSISTOR	DTA114ES
Q551	8-729-231-55	TRANSISTOR	2SC2878-AB
Q701	8-729-194-13	TRANSISTOR	2SC1941-KA
Q711	8-729-620-23	TRANSISTOR	2SC3246-JK
Q721	8-729-900-61	TRANSISTOR	DTA114ES
Q722	8-729-900-80	TRANSISTOR	DTC114ES
Q731	8-729-900-61	TRANSISTOR	DTA114ES

< RESISTOR >

R401-404					
	1-249-945-11	CARBON	8.2K	1%	1/4W
R405	1-247-719-11	CARBON	3.3K	5%	1/4W
R406	1-247-719-11	CARBON	3.3K	5%	1/4W
R411	1-247-725-11	CARBON	10K	5%	1/4W
R412	1-247-725-11	CARBON	10K	5%	1/4W
R413-416					
	1-247-722-11	CARBON	5.6K	5%	1/4W
R417-420					
	1-247-716-11	CARBON	1.8K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R421	1-247-700-11	CARBON	100	5%	1/4W
R422	1-249-512-11	CARBON	22	5%	1/4W
R423	1-247-891-00	CARBON	330K	5%	1/4W
R424	1-259-444-11	CARBON	4.7K	5%	1/6W
R425	1-247-725-11	CARBON	10K	5%	1/4W
R426	1-247-710-11	CARBON	560	5%	1/4W
R431	1-259-468-11	CARBON	47K	5%	1/6W
R432	1-259-458-11	CARBON	18K	5%	1/6W
R433	1-259-464-11	CARBON	33K	5%	1/6W
R434	1-259-472-11	CARBON	68K	5%	1/6W
R451	1-259-456-11	CARBON	15K	5%	1/6W
R452	1-259-464-11	CARBON	33K	5%	1/6W
R453	1-259-476-11	CARBON	100K	5%	1/6W
R454	1-259-444-11	CARBON	4.7K	5%	1/6W
R455	1-259-398-11	CARBON	56	5%	1/6W
R456	1-259-468-11	CARBON	47K	5%	1/6W
R457	1-259-428-11	CARBON	1K	5%	1/6W
R458	1-259-404-11	CARBON	100	5%	1/6W
R501-504					
	1-249-945-11	CARBON	8.2K	1%	1/4W
R505	1-247-719-11	CARBON	3.3K	5%	1/4W
R506	1-247-719-11	CARBON	3.3K	5%	1/4W
R511	1-247-725-11	CARBON	10K	5%	1/4W
R512	1-247-725-11	CARBON	10K	5%	1/4W
R513-516					
	1-247-722-11	CARBON	5.6K	5%	1/4W
R517-520					
	1-247-716-11	CARBON	1.8K	5%	1/4W
R521	1-247-700-11	CARBON	100	5%	1/4W
R522	1-249-512-11	CARBON	22	5%	1/4W
R523	1-247-891-00	CARBON	330K	5%	1/4W
R524	1-259-444-11	CARBON	4.7K	5%	1/6W
R525	1-247-725-11	CARBON	10K	5%	1/4W
R526	1-247-710-11	CARBON	560	5%	1/4W
R531	1-259-468-11	CARBON	47K	5%	1/6W
R532	1-259-458-11	CARBON	18K	5%	1/6W
R533	1-259-464-11	CARBON	33K	5%	1/6W
R534	1-259-472-11	CARBON	68K	5%	1/6W
R551	1-259-456-11	CARBON	15K	5%	1/6W
R552	1-259-464-11	CARBON	33K	5%	1/6W
R553	1-259-476-11	CARBON	100K	5%	1/6W
R554	1-259-444-11	CARBON	4.7K	5%	1/6W
R555	1-259-398-11	CARBON	56	5%	1/6W
R556	1-259-468-11	CARBON	47K	5%	1/6W
R557	1-259-428-11	CARBON	1K	5%	1/6W
R558	1-259-404-11	CARBON	100	5%	1/6W
R601-603					
	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-249-423-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R605-608					
	1-259-420-11	CARBON	470	5%	1/6W
R609	1-259-412-11	CARBON	220	5%	1/6W
R610	1-259-422-11	CARBON	560	5%	1/6W
R611	1-249-409-11	CARBON	220	5%	1/4W
R612	1-249-427-11	CARBON	6.8K	5%	1/4W
R613	1-249-441-11	CARBON	100K	5%	1/4W
R621	1-259-452-11	CARBON	10K	5%	1/6W
R701	1-247-717-11	CARBON	2.2K	5%	1/4W
R702	1-247-700-11	CARBON	100	5%	1/4W
R703	1-247-710-11	CARBON	560	5%	1/4W
R711	1-247-717-11	CARBON	2.2K	5%	1/4W
R721	1-249-429-11	CARBON	10K	5%	1/4W
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-259-428-11	CARBON	1K	5%	1/6W
R733	1-259-460-11	CARBON	22K	5%	1/6W
		< THERMISTOR >			
TH701	1-202-854-00	THERMISTOR, POSITIVE 10			
TH711	1-806-882-11	THERMISTOR, POSITIVE 2.2			
		< VIBRATOR >			
X611	1-577-685-11	VIBRATOR, CERAMIC (16.9344MHz)			
X621	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)			
**********					
*	A-4649-489-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C104	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-124-584-00	ELECT	100uF	20%	10V
C111-114					
	1-164-346-11	CERAMIC CHIP	1uF		16V
C115	1-162-806-11	CERAMIC	0.1uF	10%	50V
C116	1-162-806-11	CERAMIC	0.1uF	10%	50V
C121	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C122	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C124	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C125	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V

BD

Ref. No.	Part No.	Description			Remark
C151-154					
	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C155	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C156	1-164-346-11	CERAMIC CHIP	1uF		16V
C157	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C158	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C159	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C160	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C161	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171-175					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C177-180					
	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-164-346-11	CERAMIC CHIP	1uF		16V
C201	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C202	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C205	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C206	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C207	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-125-622-11	CAP, DOUBLE LAYERS	0.1F		5.5V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-164-346-11	CERAMIC CHIP	1uF		16V
		< CONNECTOR >			
* CN101	1-573-276-11	PIN, CONNECTOR 6P			
CN102	1-568-799-11	SOCKET, CONNECTOR 16P			
* CN111	1-569-998-11	PIN, CONNECTOR (PC BOARD) 2P			
* CN112	1-580-001-11	PIN, CONNECTOR (PC BOARD) 4P			
* CN113	1-580-002-11	PIN, CONNECTOR (PC BOARD) 5P			
* CN141	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CN201	1-580-007-11	PIN, CONNECTOR (PC BOARD) 10P			
* CN202	1-580-003-11	PIN, CONNECTOR (PC BOARD) 6P			
* CN203	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
* CN301	1-691-464-11	PIN, CONNECTOR 8P			
* CN302	1-691-462-11	PIN, CONNECTOR 6P			
		< DIODE >			
D301	8-719-104-34	DIODE	1S2836		
		< IC >			
IC101	8-752-344-48	IC	CXD2501Q		
IC102	8-759-071-79	IC	BA6297AFP		
IC103	8-759-040-83	IC	BA6287F		
IC141	8-759-055-78	IC	TA8407F(EL)		
IC142	8-759-700-91	IC	NJM4558M-T1		
IC151	8-759-700-91	IC	NJM4558M-T1		
IC152	8-759-700-91	IC	NJM4558M-T1		
IC201	8-752-352-93	IC	CXD2500AQ		
IC301	8-759-165-54	IC	M37451M8-282FP		
IC302	8-759-512-81	IC	LH5160N-10L		
		< TRANSISTOR >			
Q151	8-729-901-06	TRANSISTOR	DTA144EK		
Q181	8-729-901-01	TRANSISTOR	DTC144EK		
Q182	8-729-901-06	TRANSISTOR	DTA144EK		
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-049-00	METAL CHIP	1K	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-085-00	METAL CHIP	33K	5%	1/10W
R107	1-216-025-00	METAL CHIP	100	5%	1/10W
R108	1-216-049-00	METAL CHIP	1K	5%	1/10W
R121-126					
	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R127-132					
	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R133	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R134	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-079-00	METAL CHIP	18K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-077-00	METAL CHIP	15K	5%	1/10W
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151-154					
	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-117-00	METAL CHIP	680K	5%	1/10W
R158	1-216-097-00	METAL CHIP	100K	5%	1/10W
R159	1-216-083-00	METAL CHIP	27K	5%	1/10W
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W
R161	1-216-095-00	METAL CHIP	82K	5%	1/10W
R163	1-216-076-00	METAL CHIP	13K	5%	1/10W
R164	1-216-085-00	METAL CHIP	33K	5%	1/10W
R165	1-216-081-00	METAL CHIP	22K	5%	1/10W
R166	1-216-085-00	METAL CHIP	33K	5%	1/10W
R167	1-216-308-00	METAL CHIP	4.7	5%	1/10W

Ref.No.	Part No.	Description			Remark
R171-175					
	1-216-001-00	METAL CHIP	10	5% 1/10W	
R177-180					
	1-216-001-00	METAL CHIP	10	5% 1/10W	
R181	1-216-029-00	METAL CHIP	150	5% 1/10W	
R182	1-216-029-00	METAL CHIP	150	5% 1/10W	
R183	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R184	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R201	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R202	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R203	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R204	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R205	1-216-105-00	METAL CHIP	220K	5% 1/10W	
R206	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R207-209					
	1-216-041-00	METAL CHIP	470	5% 1/10W	
R210	1-216-033-00	METAL CHIP	220	5% 1/10W	
R211	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R212	1-216-037-00	METAL CHIP	330	5% 1/10W	
R213	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R301	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R303-308					
	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R309	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R310	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R311	1-216-037-00	METAL CHIP	330	5% 1/10W	
R312	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R313	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R314-318					
	1-216-073-00	METAL CHIP	10K	5% 1/10W	
		< VIBRATOR >			
X301	1-577-377-11	VIBRATOR, CERAMIC (10MHz)			
**********					
*	A-4649-423-A	DISPLAY BOARD, COMPLETE			
		**********			
*	4-923-532-01	SPACER, LED			
		< CAPACITOR >			
C801-803					
	1-164-159-11	CERAMIC	0.1uF		50V
		< DIODE >			
D801-803					
	8-719-987-63	DIODE	1N4148M		
D804	8-719-913-49	LED	EBG5638S (▶)		
D805	8-719-913-47	LED	EAA5638S (❚❚)		

Ref.No.	Part No.	Description			Remark
		< FLUORESCENT INDICATOR >			
FLD801	1-517-128-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC801	8-759-167-73	IC	MSC62408-100GS-V1K		
IC802	8-741-100-48	IC	SBX1610-59		
		< TRANSISTOR >			
Q801-804					
	8-729-900-45	TRANSISTOR	DTC114EF		
		< RESISTOR >			
R801	1-249-425-11	CARBON	4.7K	5% 1/4W	
R802	1-249-429-11	CARBON	10K	5% 1/4W	
R803	1-247-903-00	CARBON	1M	5% 1/4W	
R804	1-249-441-11	CARBON	100K	5% 1/4W	
R805	1-249-441-11	CARBON	100K	5% 1/4W	
R806	1-249-406-11	CARBON	120	5% 1/4W	
R807	1-249-410-11	CARBON	270	5% 1/4W	
		< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)			
S802	1-554-303-21	SWITCH, TACTILE (PLAY MODE)			
S803	1-554-303-21	SWITCH, TACTILE (LEVEL FILE)			
S804	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)			
S805	1-554-303-21	SWITCH, TACTILE (DIMMER REPEAT)			
S806	1-554-303-21	SWITCH, TACTILE (DIMMER TIME/MEMO)			
S807	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)			
S808	1-554-303-21	SWITCH, TACTILE (AMS ⏮)			
S809	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S810	1-554-303-21	SWITCH, TACTILE (FILE RECALL)			
S811	1-554-303-21	SWITCH, TACTILE (AMS ⏭)			
S812	1-554-303-21	SWITCH, TACTILE (▶)			
S813	1-554-303-21	SWITCH, TACTILE (FILE)			
S814	1-554-303-21	SWITCH, TACTILE (DISC MEMO ◀◀)			
S815	1-554-303-21	SWITCH, TACTILE (❚❚)			
S816	1-554-303-21	SWITCH, TACTILE (ERASE)			
S817	1-554-303-21	SWITCH, TACTILE (DISC MEMO ▶▶)			
S818	1-554-303-21	SWITCH, TACTILE (■)			
		< VIBRATOR >			
X801	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)			
**********					

HP | L. MOTOR | LINE OUT | OPT | POWER

Ref. No.	Part No.	Description			Remark
*	1-646-355-11	HP BOARD			
		********			
		< CAPACITOR >			
C461	1-162-290-31	CERAMIC	470PF	10% 50V	
C561	1-162-290-31	CERAMIC	470PF	10% 50V	
		< CONNECTOR >			
* CN461	1-573-262-11	PIN, CONNECTOR 3P			
		< JACK >			
J461	1-568-519-31	JACK, LARGE TYPE (PHONES)			
**********					
*	1-641-765-11	L. MOTOR BOARD			
		**********			
**********					
*	1-646-362-11	LINE OUT BOARD			
		**********			
		< CAPACITOR >			
C471	1-107-202-00	MICA	10PF	5% 500V	
C571	1-107-202-00	MICA	10PF	5% 500V	
		< CONNECTOR >			
* CN472	1-573-263-21	PIN, CONNECTOR 4P			
* CN473	1-573-261-31	PIN, CONNECTOR 2P			
		< DIODE >			
D471	8-719-987-63	DIODE 1N4148M			
		< JACK >			
J471	1-568-101-11	JACK, PIN 4P (LINE OUT)			
		< RESISTOR >			
R471	1-247-700-11	CARBON	100	5% 1/4W	
R472	1-247-700-11	CARBON	100	5% 1/4W	
R571	1-247-700-11	CARBON	100	5% 1/4W	
R572	1-247-700-11	CARBON	100	5% 1/4W	
		< RELAY >			
RY471	1-515-804-11	RELAY			
**********					

Ref. No.	Part No.	Description			Remark
*	1-646-361-11	OPT BOARD			
		*********			
		< CAPACITOR >			
C280	1-126-059-11	ELECT	10uF	20% 50V	
		< CONNECTOR >			
* CN280	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< IC >			
IC280	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)			
**********					
*	A-4649-680-A	POWER BOARD, COMPLETE			
		**********			
	7-682-147-15	SCREW, TR			
*	4-363-146-00	HEAT SINK, V. OUT			
*	4-921-402-01	HEAT SINK			
		< BUS BAR >			
BUS901	1-569-136-11	BAR, BUS 5P			
		< CAPACITOR >			
C901	1-104-642-11	ELECT	6800uF	20% 35V	
C902	1-104-642-11	ELECT	6800uF	20% 35V	
C903	1-126-170-11	ELECT	1000uF	20% 50V	
C904	1-126-170-11	ELECT	1000uF	20% 50V	
C911	1-136-177-00	FILM	1uF	5% 50V	
C912	1-130-483-00	MYLAR	0.01uF	5% 50V	
C951	1-126-017-11	ELECT	6800uF	20% 16V	
C952	1-124-999-11	ELECT	2200uF	20% 10V	
C953	1-124-473-11	ELECT	1000uF	20% 10V	
C954	1-126-303-11	ELECT	3.3uF	20% 50V	
C955	1-162-294-31	CERAMIC	0.001uF	10% 50V	
C961	1-126-001-11	ELECT	3300uF	20% 10V	
C962	1-124-995-11	ELECT	220uF	20% 10V	
C963	1-124-473-11	ELECT	1000uF	20% 10V	
C964	1-164-159-11	CERAMIC	0.1uF	50V	
C965	1-164-159-11	CERAMIC	0.1uF	50V	
C971	1-126-063-11	ELECT	100uF	20% 63V	
C972	1-126-049-11	ELECT	22uF	20% 50V	
C973	1-126-052-11	ELECT	100uF	20% 50V	
C974	1-126-052-11	ELECT	100uF	20% 50V	
		< CONNECTOR >			
* CN901	1-573-862-21	PIN, CONNECTOR (PC BOARD) 3P			
* CN903	1-573-263-11	PIN, CONNECTOR 4P			
* CN951	1-573-866-21	PIN, CONNECTOR (PC BOARD) 7P			

POWER **SW** **TIMER** **TRANSFORMER** **VR**

Ref. No.	Part No.	Description				Remark
* CN952	1-564-341-11	PIN, CONNECTOR 7P				
* CN953	1-573-265-11	PIN, CONNECTOR 6P				
* CN954	1-573-261-11	PIN, CONNECTOR 2P				
		< DIODE >				
D901-904						
	8-719-200-89	DIODE	31DF2-FA			
D905	8-719-210-21	DIODE	11EQS04			
D951-954						
	8-719-200-02	DIODE	10E2			
D961	8-719-200-02	DIODE	10E2			
D962	8-719-114-49	DIODE	RD7.5JS-B2			
D971	8-719-200-02	DIODE	10E2			
D972	8-719-115-15	DIODE	RD33JS-B2			
D973	8-719-114-49	DIODE	RD7.5JS-B2			
		< IC >				
IC901	8-759-231-58	IC	TA7812S			
IC902	8-759-245-86	IC	TA7912S			
IC951	8-759-231-53	IC	TA7805S			
IC952	8-759-605-00	IC	M5F78M07L			
IC953	8-759-636-16	IC	M51957AL			
		< TRANSISTOR >				
Q961	8-729-924-90	TRANSISTOR	2SB1370-EF			
Q971	8-729-140-96	TRANSISTOR	2SD774-34			
		< RESISTOR >				
⚠R911	1-212-875-00	FUSIBLE	56	5%	1/4W	F
R951	1-249-423-11	CARBON	3.3K	5%	1/4W	
R952	1-249-436-11	CARBON	39K	5%	1/4W	
R953	1-249-431-11	CARBON	15K	5%	1/4W	
R961	1-249-417-11	CARBON	1K	5%	1/4W	
R962	1-249-417-11	CARBON	1K	5%	1/4W	
R971	1-249-425-11	CARBON	4.7K	5%	1/4W	
R972	1-249-433-11	CARBON	22K	5%	1/4W	
R973	1-249-433-11	CARBON	22K	5%	1/4W	
		< THERMISTOR >				
TH901	1-808-065-11	THERMISTOR, POSITIVE				
TH902	1-808-065-11	THERMISTOR, POSITIVE				
TH951	1-808-065-11	THERMISTOR, POSITIVE				
TH952	1-808-065-11	THERMISTOR, POSITIVE				
TH961	1-808-065-11	THERMISTOR, POSITIVE				
TH971	1-806-882-11	THERMISTOR, POSITIVE				

Ref. No.	Part No.	Description				Remark
*	1-641-764-11	SW BOARD				
		********				
		< CAPACITOR >				
C001	1-161-494-00	CERAMIC	0.022uF			25V
		< RESISTOR >				
⚠R001	1-247-727-11	CARBON	10	5%	1/2W	F
⚠R002	1-247-727-11	CARBON	10	5%	1/2W	F
		< SWITCH >				
S001	1-571-300-21	SWITCH, ROTARY (IN SW)				
S002	1-571-300-21	SWITCH, ROTARY (OUT SW)				
*	1-646-356-11	TIMER BOARD				
		**********				
		< SWITCH >				
S851	1-570-157-51	SWITCH, SLIDE (TIMER)				
*	1-646-358-11	TRANSFORMER BOARD				
		**********				
		< CONNECTOR >				
* CN984	1-696-874-21	LEAD (WITH CONNECTOR) 2P				
*	1-646-354-11	VR BOARD				
		********				
		< CAPACITOR >				
C351	1-164-159-11	CERAMIC	0.1uF			50V
C352	1-164-159-11	CERAMIC	0.1uF			50V
		< CONNECTOR >				
* CN351	1-573-267-11	PIN, CONNECTOR 8P				
* CN352	1-569-993-11	PIN, CONNECTOR (PC BOARD) 6P				
		< IC >				
IC351	8-759-962-08	IC	BA6208			
		< TRANSISTOR >				
Q351	8-729-900-45	TRANSISTOR	DTC114EF			
		< RESISTOR >				
R351	1-249-413-11	CARBON	470	5%	1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

VR

Ref. No.	Part No.	Description	Remark
R352	1-249-417-11	CARBON 1K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV351	1-241-321-11	RES, VAR, CARBON 10KX3 (LINE OUT PHONE LEVEL)	
		**********	
		MISCELLANEOUS	
		**********	
⚠111	1-558-568-21	CORD, POWER (AEP, German)	
⚠111	1-559-583-21	CORD, POWER (US, Canadian)	
⚠111	1-696-934-11	CORD, POWER (UK)	
⚠215	8-848-244-11	DEVICE, OPTICAL KSS-272A	
⚠F991	1-532-066-00	FUSE, TIME-LAG (T0.4A) (AEP, UK, German)	
⚠F991	1-532-741-11	FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)	
M001	A-4604-347-A	MOTOR (LOADING) ASSY	
⚠S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (AEP, German)	
⚠T982	1-423-453-11	TRANSFORMER, POWER (US, Canadian)	
⚠T982	1-423-454-11	TRANSFORMER, POWER (AEP, UK, German)	
		**********	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-465-593-11	REMOTE COMMANDER (RM-D991)	
	1-558-271-11	CORD, CONNECTION	
	1-590-925-31	CORD, CONNECTION	
	3-707-584-01	COVER, BATTERY	
	3-755-832-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (Canadian, AEP, UK)	
	3-755-832-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-755-832-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)	
	3-755-832-71	MANUAL, INSTRUCTION (GERMAN) (German)	
	4-847-802-00	SCREW (US, Canadian)	
*	4-955-666-02	CUSHION (AEP, UK, German)	
*	4-955-669-02	CUSHION (US, Canadian)	
*	4-956-944-01	INDIVIDUAL CARTON (AEP, UK, German)	
*	4-956-952-01	INDIVIDUAL CARTON (US, Canadian)	
		**********	

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-561-09	SCREW +B 4X8	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-682-548-09	SCREW +BVTT 3X8 (S)	
#4	7-685-544-19	SCREW +BTP 3X5 TYPE2 N-S	
#5	7-685-647-79	SCREW +P 3X10 TYPE2 SLIT	
#6	7-682-547-09	SCREW +BVTT 3X6 (S)	
#7	7-682-549-09	SCREW +BVTT 3X10 (S)	
#8	7-685-871-01	SCREW +BVTT 3X6 (S)	
#9	7-682-560-04	SCREW +BVTT 4X6 (S)	
#10	7-682-147-15	SCREW, TR	
#11	7-682-144-01	SCREW +P 3X3	
#12	7-685-646-79	SCREW, TAPPING	
#13	7-685-132-19	+ PTPWH (2.6X5)	
#14	7-624-105-04	STOP RING 2.3, TYPE -E	
#15	7-621-255-25	SCREW +P 2X4	
#16	7-688-003-12	W 3, MIDDLE	
#17	7-682-551-09	SCREW +BVTT 3X14 (S)	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

English
93C0481-1
Printed in Japan
© 1993. 3

Published by Audio Corporate Planning Group

CDP-X303ES

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : US model disuse the side panel.

· Difference Parts

Page	Ref.No.	Part No.	Description
22	7	4-874-802-00	SCREW, CASE STOPPER

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

9-957-768-81

English
Printed in USA
© 1994.6